

REMARKS

The applicant wishes to thank the Office for its careful consideration of the claimed invention. Claims 1, 8, 17-22, 28, 29, 35-38 and 74-79 are pending in this application. The Office withdrew claims 74-78 from consideration, as drawn to a non-elected class. The Office has rejected claims 1, 8, 17-22, 28, 29 and 35-38. The applicant has carefully reviewed the Office's correspondence and the enclosed references, has amended the specification and claims, and respectfully traverses the Office's rejection of these claims. The applicant requests reconsideration and allowance of these claims.

Applicant further wishes to thank Examiners Pierce and Cole, for the in-person interview with the Applicant/Inventor and Applicant's attorney on April 9, and the consideration of the Examiners in their careful attention to the Inventor's presentation of the prior art and the invention and materials relating thereto. In accordance with the interview discussion, the specification and claims 1 and 38 have been amended.

Elections/Restrictions

The Office has posed a restriction requirement in accordance with 35 U.S.C. §121 between:

Species I: Claims 1, 8, 17-22, 28, 29, and 35-38 drawn to a fiber bundle classified in class 428, subclass 364.

Species II: Claims 30-34, drawn to a plied yarn, classified in class 57, subclass 211.

Species III: Claims 39, 44-47, 57, 62, and 67-73 drawn to a method of pre-washing a roll stock fabric, classified in class 156, subclass various.

Pursuant to the Office's restriction requirement election was made to prosecute the invention of species I, claims 1, 8, 17-22, 28, 29, and 35-38 in the previous Office Action Response. The Applicant notes that the Office alleges that the claims 74-78 are drawn to non-elected classes and that the Office has withdrawn claims 74-78 from consideration.

Claims Rejections - 35 USC §112

The Office rejected claims 1, 8, 17-22, 28, 29, and 35-38 under 35 U.S.C. §112, first paragraph, as failing to provide an enabling disclosure of the term "substantially parallel laid fibers" as it appears in the claims.

The applicant has amended the specification and independent claims 1 and 38 to include the language agreed upon with the examiners at the April 9th interview. The amendments are supported by Figure 3b. The applicant respectfully submits that the Office's rejections under 35 USC §112 are now moot and requests that they be withdrawn.

Claims Rejections - 35 USC §102

The Office rejected claims 1, 8, 17-19, and 35-38 under 35 U.S.C. 102(b) as being anticipated by Opitz (EP 962,562). A rejection based on anticipation requires that a single reference teach every element of the claim (MPEP § 2131). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Or stated in another way, a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

As was discussed and agreed by Examiners Cole and Pierce in the Interview Summary, dated April 9, 2003, labeled Paper No. 9, but for purposes of this response, assumed to be Paper No. 11, nowhere in the '562 reference is it disclosed to provide both fibers oriented substantially normal to the cross section of the yarn. The applicant further submits that, at least for the reasons noted above, the claims, as amended are not unpatentable under 35 USC §102, and respectfully requests that the examiner withdraw the rejection.

Claim Rejections – 35 USC § 102/103

The Office has quoted the statute from 35 USC 103(a), which is referenced herein. The Office has rejected claim 1, 8, 17-19, and 35-38 as being unpatentable as anticipated by or obvious in light of US Patent No. 5,514,457 issued to Fels et al. Applicant has carefully considered the Office rejections and respectfully submits that the amended claims, as supported by the arguments presented at the interview and repeated herein, are distinguishable from the cited references.

According to the MPEP §2143.01, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found in either the references themselves or in the knowledge generally available to one of ordinary skill in the art."

As was discussed and agreed by Examiners Cole and Pierce in the Interview Summary, dated April 9, 2003, labeled Paper No. 9, but for purposes of this response, assumed to be Paper No. 11, nowhere in the cited references is it disclosed, suggested, or could otherwise be said to motivate one to provide an article of this Applicant's invention having a yarn of two different fiber types with both fibers oriented substantially normal to the cross section of the yarn. The applicant further submits that, at least for the reasons noted above, the claims, as amended are not unpatentable under 35 USC §103, and respectfully requests that the examiner withdraw the rejection.

Claim Rejections – 35 USC §103

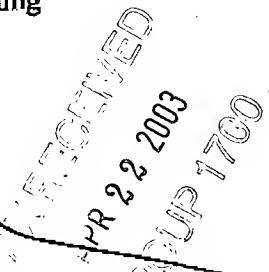
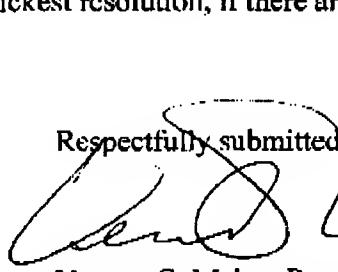
The Office rejected Claims 20-21 under 35 USC 103(a) as being unpatentable over EP 962,562 to Opitz or U.S. Patent No. 5,514,457 to Fels et al. in view of U. S. Patent No. 5,853,885 to Prickett. The Office rejected Claims 22, 28, and 29 under 35 USC 103(a) as being unpatentable over EP 962,562 to Opitz or U.S. Patent No. 5,514,457 to Fels et al. The Applicant

has carefully reviewed the cited references and respectfully submits that the amended claims, as supported by the arguments presented at the interview and repeated herein, are distinguishable from the cited references.

As was discussed and agreed by Examiners Cole and Pierce in the Interview Summary, dated April 9, 2003, labeled Paper No. 9, but for purposes of this response, assumed to be Paper No. 11, and as has been asserted by the applicant above, nowhere in the cited references is it disclosed, suggested, or could otherwise be said to motivate one to provide an article of this Applicant's invention having a yarn of two different fiber types with both fibers oriented substantially normal to the cross section of the yarn. The applicant further submits that, at least for the reasons noted above, the claims, as amended are not unpatentable under 35 USC §103, and respectfully requests that the examiner withdraw the rejection.

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: HOWLAND, Charles A. Group Art Unit: 1771

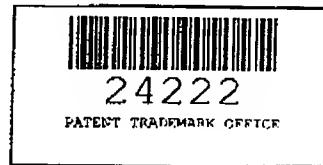
Serial No. 09/943,749 Examiner: PIERCE, Jeremy R.

Filed: 08-30-2001 Atty. Dkt. No: W0490/7031

For: METHODS FOR IMPROVING THE DYEBILITY AND PUNCTURE RESISTANCE OF FABRICS COMPRISING HIGH TENACITY FIBERS AND FABRICS PRODUCED BY SUCH METHODS

To: Assistant Commissioner for Patents
Box No Fee/Amendment
Washington, D.C. 20231

Fm:



CERTIFICATE OF FACSIMILE 37 CFR 1.8: I certify that this correspondence is being faxed to: Examiner Jeremy R. Pierce at FAX #: 703-872-9310, TEL #: 703-605-4243 on the below date.
Date: 12/16/02 Debra A. Stengel Anne M. Markowski Anne M. Markowski,
 Vernon C. Maine, Reg. No. 37,389 or Scott J. Asmus, Reg. No. 42,269

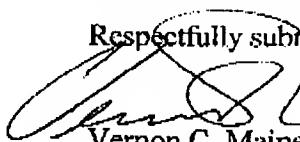
Dear Commissioner:

AMENDMENT TRANSMITTAL

Transmitted for entry in the above case, in response to Office Action dated 08/14/2002, are 5 pages of amendments and remarks, 2 pages version with markings to show changes made, and Credit Card Authorization PTO-2038 in the amount of \$ 55.00 to cover fee for extension for response within first month 37 CFR 1.17(a)(1)- small entity.

All necessary fees relating to the attached submittal, if any, are intended to be included. However, the Office is hereby authorized to charge any deficiency or credit any overpayment in the fees to deposit account 500323.

Respectfully submitted,


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Serial No. 09/965,558
Atty. Doc. No. 01P17802US

Please revise the claims as indicated:

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1. (currently amended) A method of making a insulating material used as a thermal insulating layer, comprising the steps:

providing a first permeable structure having a contacting surface that is permeable to a liquid portion of a slurry comprising a binder but that is not permeable to a solid portion of the slurry;

providing a second permeable structure parallel and at a distance away from the first permeable structure thereby defining a first void between the first and second permeable structures;

placing geometric shapes in the void between the first and second permeable structures;

providing ^{an} impermeable restraining structure parallel to the second permeable structure a distance away from the second permeable structure and opposite the first permeable structure defining a second void between the second permeable structure and the impermeable structure;

~~poring-introducing the slurry into the void between the second permeable structure and the impermeable structure one of a binder/filler particle slurry or a binder medium; and~~

applying pressure in the void between the second permeable structure and the impermeable structure forcing the slurry through the second permeable structure and around the geometric shapes ^{partly} filling in any voids adjacent the geometric shapes and being forced against the first permeable structure;

drying the slurry around the geometric shapes to form a matrix material; and
heating the matrix material to form the insulating material.

2. (currently amended) The method of according to claim 1 further comprising the step of, compacting the geometric shapes in the first void between the first and second permeable structures after placement of the geometric shapes in the first void.

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3. (currently amended) The method of according to claim 1 further comprising an extracting member located perpendicular and adjacent to the first permeable restraining structure in direct contact with the geometric shapes wherein the extracting member and the second permeable member defines the first void.

4. (currently amended) The method of according to claim 3 wherein the step of applying pressure further comprises forcing the slurry into the second void through the first permeable structure around the geometric shapes and against the extracting member.

5. (currently amended) The method of according to claim 4 wherein the step of applying pressure and forcing the slurry against the extracting member thereby causing capillary wicking of the liquid from the slurry due to the extracting member and further extracting any excess liquid from the slurry.

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6. (currently amended) The method of according to claim 5-4, wherein the step of applying pressure causes capillary wicking of liquid from the slurry to form the matrix material, and further comprising the step of removing the insulating material from the chamber and drying in the insulating material-matrix material at a drying temperature for an amount of time sufficient to dry the insulating material-matrix material to a green state.

7. (currently amended) The method of according to claim 6 further comprising the step of firing the insulating material after the drying step at a temperature at least to 1200°C for an amount of time to produce a matrix binder.

8. (cancelled)

9. (currently amended) The method of according to claim 8-7 wherein the heat drying and firing steps occur at temperatures between 80-120°C and 1,000-1600°C degrees respectively and for an amount of time between 2 hrs and 12 hrs.

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10. (currently amended) The method of according to claim 8-9 wherein the step-step of drying and firing comprises ramping wherein the temperature is ramp-up at a rate between 5-3 degrees per minute and 10 degrees per minute up to between from 120° C and to 1600° C.

11. (currently amended) The method of according to claim 1 wherein the first and second permeable structure structures and the impermeable structure are formed in a respective geometric shape shapes dependant upon the a planned use of the ceramic insulating material as a thermal insulating layer.

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12. (currently amended) A method of making a ceramic material, formed into geometric shapes and used for use as a thermal barrier layer, comprising the steps:

providing a permeable structure having a first surface;

providing a fibrous material adjacent to the first surface of the permeable structure;

providing a porous membrane parallel and at a distance from the fibrous material, wherein the porous membrane and fibrous material defines define a sphere chamber;

placing hollow spheres into the sphere chamber;

providing a-an impermeable structure positioned parallel and at a distance from the fibrous material porous membrane, wherein the porous membrane and impermeable structure defines define a slurry chamber;

placing a flowable slurry into the slurry chamber; and

applying pressure into the slurry chamber such that the slurry infiltrates through the porous membrane and around the hollow spheres and against the fibrous material;

removing liquid from the slurry in the slurry chamber to form a matrix material around the hollow spheres; and

heating the matrix material to form the ceramic material for use as a thermal barrier layer.

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13. (currently amended) The method according to claim 12 wherein the permeable structure and the extraction membrane provides fibrous membrane provide a means for capillary wicking of the liquid from the slurry through the extraction membranepermeable structure.

14. (original) The method according to claim 12 wherein the slurry comprises oxide filler and aluminum phosphate and a liquid.

15. (currently amended) The method according to claim 12 wherein the porous membrane is a perforated sheet of material defining plurality of holes therein having a diameter to allow ~~and~~an even flow of the slurry to pass therethrough and provides an even distribution of the slurry into the sphere chamber around the spheres.
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16. (currently amended) The method according to claim 12 wherein the hollow spheres are selected from the group consisting of Mullite, Alumina, Zirconia orand any combination thereof.

17. (currently amended) The method according to claim 12 wherein the fibrous material ~~is~~comprises aluminosilicate fibers.

18. (original) The method according to claim 12 wherein the step of applying pressure is achieved by applying 5 to 20 psi of pressure.

19. (currently amended) The method according to claim 12 further comprising the step of:
continuing the step of applying pressure to wick liquid out of the slurry through the fibrous material to dry the slurry to form the matrix material; and
removing the ceramic-matrix material from the sphere chamber and drying in the ceramic-matrix material at a drying temperature for an amount of time to dry the ceramic-matrix material to a green state.

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20. (currently amended) The method according to claim 19 further comprising the step of firing the ceramic matrix material after the drying step at a temperature at least to 1200°C for a predetermined amount of time.

21. (currently amended) The method of according to claim 20 wherein the steps step of drying the ceramic matrix material further consists of comprises heating the ceramic matrix material.

22. (currently amended) The method of according to claim 21 wherein the heat drying and firing steps occur at a temperature between 100° C and 1500° C degrees and for an amount of time up to 12 hours.

23. (currently amended) The method of according to claim 20 wherein the step of drying and firing wherein the temperature is ramp up at a rate between 2° per minute and 15° per minute.

24. (currently amended) The method of according to claim 12 wherein the permeable restraining structure, the fibrous material, and the porous membrane and the impermeable structure forms have respective a-geometric shape-shapes dependant upon the end use of the ceramic insulating material.

APPLICATION TRANSFER REQUEST FOR S.N.: 09/1965,558Section I. TRANSFER REQUEST BY (PRINT NAME) SHRIVE BECK/SPE Date 01/01/01TO: Art Unit FTS2 Class/Sub 264/86? FROM: A.U. 1762 Class 427REASON: 1731 *No Coating for class 427*Gatekeeper concurrence: MAT/1709

Hand carried: Personally accepted by: _____

Section II a. DISPOSITION BY RECEIVING T.C. By: _____ A.U. _____ Date _____

 ACCEPTED BY RECEIVING T.C.

NOT ACCEPTED

 Forward to RECEIVING T.C. Post Classifier Non-classification issue/other, return to Originating TC/AU _____

REASON:

Section II b. DISPOSITION BY RECEIVING T.C. POST CLASSIFIER

 This dispute was resolved. Forward to TC/AU _____ Class/Sub _____ Post Classifier _____ Date _____

Concurring _____ Date _____

 This dispute was not resolved. Forward to DISPUTE RESOLUTION PANEL

Post Classifier Assessment:

Gatekeeper Concurrence _____

Post Classifier _____

Date _____

Section III. DISPOSITION BY DISPUTE RESOLUTION PANEL Date _____

Panel Decision: Forward to Technology Center / Art Unit _____ Class/Sub _____

REASON:

Panel Member: _____ Concurring Panel Member: _____

 This application MAY NOT be returned to the dispute resolution panel. THIS IS A FINAL DISPOSITION.